

**REMARKS**

Independent claims 7 and 14 have been amended to replace the transitional phrase “consisting essentially of” with the transitional phrase “consisting of,” to replace the phrase “polymeric organic filler” with the phrase “organic filler,” and to recite that at least one additive selected from the group consisting of at least one antioxidant, at least one cure accelerator, at least one cure activator, at least one tackifier, at least one plasticizer, and mixtures thereof is present in the insulation material. Support for the amendments is found in the as-filed specification at at least paragraphs [0017], [0030], and [0033]. Claim 14 has been amended to improve the clarity of the claim. No new matter has been added.

These amendments should be entered by the Examiner because they place the application in condition for allowance. Alternatively, the amendments place the application in better form for appeal.

The Final Office Action (“Final Office Action”) mailed November 15, 2005, has been received and reviewed. Claims 1-3, 5-11, 14-18, and 20 are currently pending in the application. Claims 1-3, 5, and 6 have been withdrawn from consideration as being drawn to a nonelected invention and are canceled herein without prejudice or disclaimer to the filing of one or more divisional application(s). Claims 7-11, 14-18, and 20 stand rejected. Applicant proposes to amend claims 7, 14, and 15, cancel claims 1-3, 5, 6, 9-11, and 16-18, and respectfully requests reconsideration of the application as proposed to be amended herein.

**Finality of the Office Action**

Applicant respectfully submits that the finality of the outstanding Office Action is improper and should be withdrawn because the claims are rejected under newly cited art. In the Final Office Action, the Examiner relies on U.S. Patent No. 4,726,987 to Trask *et al.* (“Trask”) to reject the pending claims as being obvious. However, Trask was only made of record in a Form PTO-892 mailed on December 14, 2005, after the mailing of the Final Office Action. As such, the instant response is Applicant’s first and only opportunity to respond to the Examiner’s rejection based on this reference. Since a final rejection is only proper after a second or subsequent action on the merits, the finality of the instant Office Action is improper and should be withdrawn. See M.P.E.P. § 706.07(a).

The Examiner also states that the Applicant's previous amendments necessitated the new grounds of rejection because the claims were "amended to include specific polymeric organic fillers and the transitional claim language "consists essentially of." Final Office Action, p. 2. However, in Applicant's response filed on September 2, 2005, claims 7 and 14 were amended to recite subject matter that was disclosed in the as-filed specification. As required by M.P.E.P. § 904, the Examiner's initial search should have covered "the invention as described and claimed." Therefore, the initial search should have included this subject matter. In addition, since amending the claims to recite the transitional phrase "consisting essentially of" narrowed the scope of the claims, the Examiner's initial search should have covered this subject matter. As such, Applicant respectfully submits that the amendments did not necessitate the new grounds of rejection and, therefore, the finality of the instant Office Action is improper and should be withdrawn.

### **Claim Objections**

#### Claims 7 and 14

Claims 7 and 14 are objected to because, as the Examiner asserts, "melamine is a small molecule and not a polymeric organic filler." Applicant has amended these claims and respectfully requests that the objection be withdrawn.

#### Claims 9, 11, 16, and 18

Claims 9, 11, 16, and 18 are objected to under 37 CFR 1.75(c) "as being of improper independent form for failing to further limit the subject matter of a previous claim." Claims 9, 11, 16, and 18 have been canceled, rendering moot the objection.

#### Claims 10 and 17

Claims 10 and 17 stand objected to because, as the Examiner asserts, "and" should be replaced with "or" or "and/or" in the last line of each claim. Applicant has canceled claims 10 and 17. However, since the subject matter of these claims has been incorporated into independent claims 7 and 14, Applicant treats the objection as applying to claims 7 and 14. Applicant has amended claims 7 and 14 to recite "at least one additive selected from the group

consisting of at least one antioxidant, at least one cure accelerator, at least one cure activator, at least one tackifier, at least one plasticizer, and mixtures thereof” and respectfully requests that the objection be withdrawn.

#### Claims 15-18

Claims 15-18 are objected to because of the insertion of a phrase considered by the Examiner to be redundant since claim 14 (upon which claims 15 through 18 are dependent) recites the same phrase. Claims 16-18 have been canceled, rendering moot the objection as to these claims. In regard to claim 15, Applicant disagrees with the Examiner’s position and notes that the recited phrase provides proper antecedent basis for the method claim. For the sake of advancing prosecution, Applicant has amended claim 15 to abbreviate the objected-to phrase. However, Applicant has not amended the claim as suggested by the Examiner (“The method of claim 14, wherein the insulation material further comprises . . .”) because this amendment implies that the insulation material further comprises at least one organic flame-retardant and at least one inorganic flame-retardant, *i.e.*, in addition to the flame-retardant currently recited in claim 14. Instead, applicant has amended claim 15 to recite that the insulation material comprises at least one organic flame-retardant and at least one inorganic flame-retardant. In light of this amendment, Applicant respectfully requests that the objection be withdrawn.

#### **35 U.S.C. § 103(a) Obviousness Rejections**

##### Obviousness Rejection Based on U.S. Patent No. 4,878,431 to Herring in View of Trask

Claims 7-11, 14-18, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,878,431 to Herring (“Herring”) in view of Trask. Claims 9-11 and 16-18 have been canceled, rendering moot the rejection as to these claims. Applicant respectfully traverses the rejection as to the remaining claims, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for an obviousness rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or

references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The obviousness rejection of claims 7, 8, 14, 15, and 20 is improper because the cited references do not teach or suggest all of the claim limitations and do not provide a motivation to combine to produce the claimed invention.

Herring teaches an elastomeric lining material for use in a rocket motor. Herring at column 1, lines 11-14. The elastomeric lining material includes an elastomeric polymer that is substantially saturated and an elastomeric polymer that is substantially unsaturated. *Id.* at column 2, lines 24-27. The substantially saturated elastomeric polymer includes polychloroprene, chlorosulfonated polyethylene, polyurethane, and ethylene propylene diene monomer ("EPDM") and the substantially unsaturated elastomeric polymer is a polyisoprene. *Id.* at column 3, lines 54-57 and column 4, lines 25-28. The elastomeric lining material also includes char-forming organic fibers and organic or inorganic particulates. *Id.* at column 2, lines 27-35. The char-forming organic fibers are polyaramide pulp fibers. *Id.* at column 3, lines 1-4. The organic or inorganic particulates include hydrated silica, mica, quartz, or chlorinated hydrocarbon compounds. *Id.* at column 4, lines 34-46.

Trask teaches a fire retardant textile panel that is used in the interior of aircraft. Trask in the Abstract. The textile panel has five layers and includes a core material having a mixture of two or more staple fibers, such as polyamide fibers, polyimide fibers, poly(imideamide) fibers, aramide fibers, polyolefin fibers, polyester fibers, cellulosic fibers, sulfars, glass fibers, carbon fibers, or polyether-ether ketone fibers. *Id.* at column 4, lines 48-53 and column 7, lines 6-12. The core material is sandwiched by four other layers, each of which includes a mixture of two or more of the above-mentioned staple fibers. *Id.* at column 4, line 66 through column 5, line 37. The five layers are attached together, such as by needle punching. *Id.* at column 5, lines 16-26. A skin, such as a polyvinylchloride ("PVC") material, is attached to a top surface of the five layers. *Id.* at column 5, lines 38-39. Trask also teaches that polyamides, polyimides, poly(imideamides), and polyphenylene sulfide fibers are flame retardant and produce char when burned. *Id.* at column 1, lines 55 through column 2, line 65. In addition, Trask teaches that PVC

is resistant to temperature, combustion, and chemicals. *Id.* at column 3, lines 18-28. However, Trask also teaches that each of these ingredients is problematic when used in flame retardant applications because no single ingredient provides an ideal combination of flame retardant properties. *Id.* at column 3, lines 36-45.

The cited references do not teach or suggest all of the limitations of independent claim 7, as proposed to be amended, because neither reference teaches or suggests an “insulation material consisting of a low-density ethylene propylene diene monomer polymer, at least one flame-retardant, an organic filler selected from the group consisting of polyvinyl chloride, polyphenylene sulfide, melamine, and a homopolymer of vinylidene chloride, and at least one additive selected from the group consisting of at least one antioxidant, at least one cure accelerator, at least one cure activator, at least one tackifier, at least one plasticizer, and mixtures thereof.” Instead, the elastomeric lining material of Herring includes EPDM, polyisoprene, polyaramide pulp fibers, and the organic or inorganic particulates. Since Herring does not teach or suggest the organic fillers recited in claim 7, Herring necessarily does not teach or suggest all of the limitations of claim 7. In addition, since the elastomeric lining material of Herring includes polyisoprene and the organic or inorganic particulates, Herring does not teach or suggest a material that “consists of” the components recited in claim 7. Trask also does not teach or suggest the above-mentioned limitation because the textile panel of Trask is formed from staple fibers and a vinyl skin. As such, Trask also does not teach or suggest a material that “consists of” the components recited in claim 7.

The cited references also do not provide a motivation to combine to produce the claimed invention. To provide a motivation or suggestion to combine, the prior art or the knowledge of a person of ordinary skill in the art must “suggest the desirability of the combination” or provide “an objective reason to combine the teachings of the references.” M.P.E.P. § 2143.01. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *Id.* (emphasis in original). It is fundamental that obviousness rejections must be based on objective evidence of record. *In re Lee*, 277 F.3d 1338, 1342-1343 (Fed.Cir. 2002). The Examiner “cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies.” *Id.* at 1345.

Applicant respectfully submits that nothing in Herring and Trask, when combined, suggests the desirability of, or provides an objective reason for, combining the references. As acknowledged by the Examiner, Herring does not teach or suggest the organic fillers recited in claim 7. Final Office Action, p. 4. Therefore, the Examiner relies on Trask as teaching this limitation and states that “it would have been obvious to one of ordinary skill in the art to utilize a polyphenylene sulfide or polyvinyl chloride as a char-former in the rocket motor insulation of Herring and thereby arrive at the presently claimed invention.” *Id.* at p. 5. However, this reasoning by the Examiner is conclusory and is not based on objective evidence of record because nothing in Herring suggests the desirability of, or provides an objective reason for, using the recited organic fillers in its elastomeric lining material. Rather, Herring only teaches using polyaramide pulp fibers in its elastomeric lining material. Trask also does not suggest the desirability of, or provide an objective reason for, using the recited organic fillers in an insulation material. While Trask teaches that polyphenylene sulfide is a flame retardant, Trask also teaches that polyphenylene sulfide and the other flame retardants do not provide ideal properties. As such, Trask does not suggest the desirability of, or provide an objective reason for, using such materials in an insulation material, such as that of Herring.

Since the cited references do not teach or suggest all of the limitations of claim 7 and do not provide a motivation to combine to produce the claimed invention, the obviousness rejection is improper and should be withdrawn.

Claim 8 is allowable, *inter alia*, as depending from an allowable base claim.

Since independent claim 14, as proposed to be amended, recites substantially the same limitations as claim 7, claim 14 is allowable for substantially the same reasons as claim 7.

Claim 15 and 20 are allowable, *inter alia*, as depending from an allowable base claim.

Obviousness Rejection Based on Herring in View of U.S. Patent No. 4,246,359 to Whelan

Claims 7-11, 14-18, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Herring in view of U.S. Patent No. 4,246,359 to Whelan (“Whelan”). Claims 9-11 and 16-18 have been canceled, rendering moot the rejection as to these claims. Applicant respectfully traverses the rejection as to the remaining claims, as hereinafter set forth.

The teachings of Herring are as previously described.

Whelan teaches a flame-retarded elastomeric composition that includes a diene elastomer. Whelan at column 1, lines 59-66. The diene elastomer is a homopolymer of a hydrocarbon conjugated diene or a copolymer of the hydrocarbon conjugated diene with an ethylenically unsaturated comonomer, such as a styrene-butadiene rubber. *Id.* at column 2, lines 7-39 and Example 1. The elastomeric composition is flame retardant due to the presence of a combination of a halogen-containing organic compound, alumina trihydrate, and iron oxide. *Id.* at column 1, line 66 through column 2, line 6. The halogen-containing organic compound is polychloroprene, chlorinated polyethylene, chlorinated PVC, polyvinylidene chloride, chlorosulfonated polyethylene, and epichlorohydrin copolymers or polymers. *Id.* at column 3, lines 19-32.

The obviousness rejection of claims 7, 8, 14, 15, and 20 is improper because the cited references do not teach or suggest all of the claim limitations and do not provide a motivation to combine to produce the claimed invention.

The cited references do not teach or suggest all of the limitations of claim 7 because neither reference teaches or suggests an “insulation material consisting of a low-density ethylene propylene diene monomer polymer, at least one flame-retardant, an organic filler selected from the group consisting of polyvinyl chloride, polyphenylene sulfide, melamine, and a homopolymer of vinylidene chloride, and at least one additive selected from the group consisting of at least one antioxidant, at least one cure accelerator, at least one cure activator, at least one tackifier, at least one plasticizer, and mixtures thereof.” Herring does not teach or suggest this limitation for substantially the same reasons as described above. Specifically, Herring does not teach or suggest the organic fillers recited in claim 7. In addition, since its elastomeric lining material includes polyisoprene and the organic or inorganic particulates, Herring does not teach or suggest a material that “consists of” the components recited in claim 7. Whelan also does not teach or suggest this limitation because its elastomeric composition includes a diene elastomer, a halogen-containing organic compound, alumina trihydrate, and iron oxide. As such, Whelan also does not teach or suggest the organic fillers recited in claim 7 or that its elastomeric composition “consists of” the components recited in claim 7.

The cited references also do not provide a motivation to combine to produce the claimed invention. The Examiner states that “it would have been well within the capabilities of one of ordinary skill in the art to utilize an appropriate chlorinate compound in Herring, including those

polymeric organic compounds within the scope of the present claims, and thereby arrive at the presently cited claims.” Final Office Action, p. 6. However, even assuming *arguendo* that the Examiner’s statement is true, the claimed invention still would not be produced because the resulting material would not include the organic fillers recited in claim 7 and would not be a material that “consists of” the components recited in claim 7.

Since the cited references do not teach or suggest all of the limitations of claim 7 and do not provide a motivation to combine to produce the claimed invention, the obviousness rejection is improper and should be withdrawn.

Claim 8 is allowable, *inter alia*, as depending from an allowable base claim.

Since independent claim 14, as proposed to be amended, recites substantially the same limitations as claim 7, claim 14 is allowable for substantially the same reasons as claim 7.

Claim 15 and 20 are allowable, *inter alia*, as depending from an allowable base claim.



### ENTRY OF AMENDMENTS

The proposed amendments to claims 7, 14, and 15 should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add new matter to the application. Further, the amendments do not raise new issues or require a further search. Finally, if the Examiner determines that the amendments do not place the application in condition for allowance, entry is respectfully requested upon filing of a Notice of Appeal herein.

### CONCLUSION

Claims 7, 8, 14, 15, and 20 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain that might be resolved by a telephone conference, she is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



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